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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/696,805	10/29/2003	Rong-Chang Liang	07783.0082.NPUS00	1310

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EXAMINER

HASAN, MOHAMMED A

ART UNIT	PAPER NUMBER
2873	

DATE MAILED: 11/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/696,805	Applicant(s) LIANG ET AL.	
	Examiner Mohammed Hasan	Art Unit 2873	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 October 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1- 49 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 28 - 46 is/are allowed.
- 6) ☒ Claim(s) 1 - 4, 5, 6, 7, 9, 10, 15, 17, 18 - 24 is/are rejected.
- 7) ☒ Claim(s) 8, 11 - 14, 16, 25 - 28, 47 - 49 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Note: The final rejection of 7/28/2005 has been withdrawn in view of a new ground of rejection.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1- 4, 6, 7, 15, and 17 - 24 are rejected under 35 U.S.C. 102(e) as being anticipated by Gordon, II et al (6,831,770 B2).

Regarding claim 1, Gordon, II et al discloses (refer to figure 1) an electrophoretic display, which comprises more than one layer (i.e., 2a, 2b, 4a, and 4b) of display cells (14, 15, and 16) filled with electrophoretic fluids (12a, 12b, and 12c) (column 6, lines 64 – 67, column 7, lines 15 - 21).

Regarding claim 2, Gordon, II et al discloses (refer to figure 1) wherein filled display cells are sealed with a polymeric sealing layer (2a) (column 7, lines 1 - 12).

Regarding claim 3, Gordon, II et al discloses (refer to figure 1) the display cells (14, 15, and 16) are separated by partition walls (20a, 20b and 20c) (column 7, lines 13 - 15).

Regarding claim 4, Gordon, II et al discloses (refer to figure 1) wherein polymeric sealing layer encloses the electrophoretic fluids (12a, 12b, and 12c) within each cell and sealing adheres to the surface of the partition walls (20a, 20b, and 20c) of the cells (column 7, lines 1 - 54).

Regarding claim 6, Gordon, II et al discloses (refer to figure 1) wherein polymeric sealing layer (2a) is contact with the top surface of the electrophoretic fluid (12a) (column 7, lines 1 - 18).

Regarding claim 7, Gordon, II et al discloses (refer to figure 1) wherein the display cells (14, 15, and 16) are the partition type display cells (column 7, lines 13 - 15).

Regarding claim 15, Gordon, II et al discloses, wherein the display cells (14, 15 and 16) are filled with electrophoretic fluids of different colors, optical densities, switching speeds or magnetic properties (column 11, lines 34 – 50, column 8, lines 15 - 16).

Regarding claim 17, Gordon, II et al discloses, wherein the cells are separated by inactive partition areas (20a, 20b, 20c) and the electrophoretic fluid (12a, 12b, and 12c) is enclosed within each cell by a polymeric sealing layer (column 7, lines 13 – 32)

Regarding claim 18, Gordon, II et al discloses, wherein inactive partition areas of a layer are positioned with registration to area of display cells (14, 15, and 16) filled with

electrophoretic fluids (12a, 12b, and 12c) another layer in a staggered fashion (i.e., layer 2a, 2b and 2c staggered fashion as shown in figure 1).

Regarding claim 19, Gordon, II et al discloses (refer to figure 1) which comprises one top layer (2a) of display cells (14) and one bottom layer (2b) of display cells (14) (column 7, lines 1 - 7).

Regarding claim 22, Gordon, II et al discloses, a multicolor electrophoretic display wherein the bottom layer on the non-viewing side comprises black cells are filled with an electrophoretic fluid comprising white pigment particles or pigment – containing microparticles dispersed in a black solvent or solvent mixture (column 8, lines 26 - 41).

Regarding claim 23, Gordon, II et al discloses, a full color or multi-color electrophoretic display wherein the bottom layer on the non-viewing side comprises red, green, blue and black cells which are filled with electrophoretic fluids comprising white pigment particles or pigment- containing microparticles (10a, 10b, and 10 c) dispersed in red, green, blue and black solvent or solvent mixture, respectively and the top layers comprises red, green and blue cells which are filled with electrophoretic fluids comprising white pigment particles or pigment –containing microparticles dispersed in red, green and blue solvent or solvent mixture (column 8, lines 42 – 67, column 9, lines 1 - 10).

Regarding claim 24, Gordon, II et al discloses, wherein the colored cells and inactive partition areas of the two layers are arranged in a staggered fashion (as shown in figure 1) that the red, green, blue and black cells of the bottom layer respectively (column 8, lines 42 - 67).

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 5, 9 and 10 are rejected under 35 U.S.C 103 (a) as being unpatentable over Gordon, II et al (6,727,873 B2) in view of Motoi et al (6,882,463 B2).

Regarding claim 5 as applied to claim 4, claim 9 as applied to claim 1, and claim 10 as applied to claim 9, Gordon, II et al discloses all of the claimed limitations except cells are partially filled with electrophoretic fluid, microcapsules having a cell size from about 10 to about 200 μm and 30 to 120 μm . However, Motoi et al discloses the (refer to figures 3a and 3b) electrophoretic displaying particles 1 dispersed in dispersing medium 2 (column 3, lines 43 – 45) and electrophoretic displaying particles has an average size less than 0.1 μm and more than 20 μm (column 4, lines 9 – 15).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide particles with dispersing medium and particles with an average size more than 20 μm in to the Gordon electrophoretic display for the purpose of low power consumption and less visual tension (column 1, lines 34 – 35).

Claims 20 and 21 are rejected under 35 U.S.C 103 (a) as being unpatentable over Gordon, II et al (6,727,873 B2) in view of Gordon, II et al (5,745,094).

Claims 20 as applied to claim 19, claim 21 as applied to claim 19, Gordon, II et al ('873) discloses (refer to figure 1) a display cells (14, 15, and 16), an electrophoretic fluids (12a, 12b, and 12c) (column 6, lines 64 – 67, column 7, lines 15 – 21). Gordon, II et al ('873) discloses all of the claimed limitations except an electrophoretic fluid comprising white pigment particles. However, Gordon, II et al ('094) discloses (refer to figure 2) the pigments 12 (column 4, lines 14 – 16) and the pigment particle can be black or colored such as white, red, green or the like (column 2, lines 40 – 42).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide pigments particle with white color in to the Gordon, II electrophoretic display device for the purpose of cell operates without need any contiguous artificial electric light source as taught by Gordon, II et al (column 2, lines 35 – 36).

Allowable Subject Matter

3. Claims 28 – 46 are allowed.
4. The following is an examiner's statement of reasons for allowance: The prior art taken either singularly or in a combination fails to anticipate or fairly suggest the limitations of the independent claims, in such a manner that a rejection under 35 U.S.C. 102 or 103 would be proper. The prior art fails to teach a combination of all the claimed

Art Unit: 2873

features as presented in independent claims 28 and 35, for example, which include, a process for the preparation of an electrophoretic display of more than one layer of display cells process comprises: (a) preparing separately two layers of display cells, each having conductor film and a sealing side, (b) laminating one of the layers over the other optionally with an adhesive layer (claim 28); and process comprises (a) forming a first layer and first layer having a conductor film side and sealing side (b) forming a second layer of display cells on a transfer release layer (c) laminating a second layer over the first layer and removing the transfer release layer (d) optionally forming separately additional layers of display cells on transfer release layers and each layer having a transfer release layer side and a sealing side (e) laminating each of additionally layers over a stack of layers already formed and removing the transfer release layer (f) laminating a second conductor film over a stack (claim 35 allowed previous office action).

5. Claim Claims 8, 11 - 14, 16, 25 – 28 and 47 –49 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. The following is a statement of reasons for the indication of allowable subject matter: The prior art fails to show the display cells are prepared by microembossing, cells are prepared by photolithography or prepunched holes, and two layers are prepared by different methods, display cells are sandwiched between two conductor films and then shortest distance between the two conductor films is in the range of

Art Unit: 2873

about 15 to about 200 μm , the shortest distance between the two conductor films is in the range of about 20 to about 50 μm , and wherein each layer of display cells has a thickness in the range of about 12 to 30 μm , each layer of display cells has a thickness in the range of about 10 to about 100 μm , one of more than one of display cells having shape, dimension or ratio of opening to total area different from those of display cells of another layer, and polymeric sealing layer is formed from a sealing composition having a specific gravity than electrophoretic fluid, display cells comprises one top layer of display cells and one bottom layer comprising display cells which are filled with an electromagnetophoretic fluid comprising a mixture of black magnetic particles and white non-magnetic particles dispersed in a colorless clear solvent or solvent, display cells are the microgroove or microchannel type.

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The closest prior art

Sheridon et al (5,767,826) discloses a subtractive color twisting ball display.

Response to Arguments

8. Applicant's arguments with respect to claims 1 – 10, 13 – 29, 34, 47 - 49 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

9. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

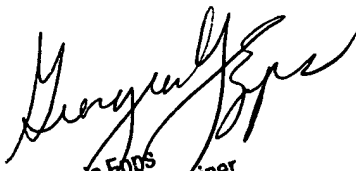
9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mohammed Hasan whose telephone number is (571) 272-2331. The examiner can normally be reached on M-TH, 7:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Georgia Epps can be reached on (571) 272- 2328. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2873

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MH
October 22, 2005



Georgia Epps
Supervisory Patent Examiner
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